

ABSTRACT

Powder mixture for resorbable calcium phosphate biocements

[00067] The present invention relates to a powder mixture for resorbable calcium phosphate biocements, which mixture consists of 40-99% by volume of powder having a particle size of $0.1-10\mu\text{m}$, 1-20% by volume of powder having a particle size of $10-43\mu\text{m}$ and 0-59% by volume of powder having a particle size of $43-315\mu\text{m}$, which powder is obtained by grinding the spontaneously crystallizing melts of a material comprising crystalline and X-ray amorphous phases, which material

a) according to ^{31}P -NMR measurements, contains Q_0 -groups of orthophosphate and Q_1 -groups of diphosphate, the orthophosphates or Q_0 -groups making up 65 to 99.9% by weight relative to the total phosphorus content of the powder mixture and the diphosphates or Q_1 -groups making up 0.1 to 35% by weight relative to the total phosphorus content of the powder mixture, and

b) according to X-ray diffractometric measurements and relative to the total weight of the powder mixture, contains 35 to 99.9% by weight of a main crystal phase consisting of various Ca-orthophosphates and 0.1 to 20% by weight of a secondary crystal phase consisting of various Ca-diphosphates and chain phosphates, and

c) besides the main crystal phase, contains an X-ray amorphous phase which in total makes up 0.1 to 65% by weight relative to the total weight of the powder mixture.